we hear that

mosphere; Judge reported it to be approximately 15% helium, 84% hydrogen and one per cent methane, ammonia and other molecules.

Judge received his PhD in 1965 from USC, where he has taught for nine years.

Hla Shwe, chairman of the physics department at East Stroudsburg State College, Pa., has been appointed dean of the faculty of science.

Frits Zernike, formerly on the staff of the Perkin-Elmer Corp, has joined Philips Laboratories as a senior scientist in electrooptics and thin-film technology.

William C. H. Joiner has been appointed head of the physics department at the University of Cincinnati.

The Institute of Electrical and Electronics Engineers has named **Herbert A. Schulke,** Jr general manager effective 1 January 1975. Schulke, a Major General in the US Army, will leave his current post as director of communication electronics in the Organization of the Joint Chiefs of Staff to become IEEE's senior permanent administrator.

Edward Gibson, science pilot on the 84-day Skylab 4 mission, is leaving NASA to join the Aerospace Corporation of Los Angeles as a senior staff scientist. He will specialize in interpreting solar data gathered during the 171 days of manned Skylab operation.

Joining Pennsylvania State University as assistant professors of physics are **Milton W. Cole** and **Karnig O. Mikaelian,** University Park campus, **James R. Klein,** Worthington-Scranton campus, and **Ruth C. Hollinger,** Altoona campus.

obituaries

Bernard Serin

Bernard Serin died on 18 June in Cheadle Hulme, England at the age of 52. After 26 years at Rutgers University, he was finishing his first year in a new position at the University of Manchester.

A native of New York City, Serin was a PhD student of L. I. Schiff at the University of Pennsylvania and then a postdoctoral fellow for one year at New York University. He came to Rutgers in 1947 to start a program of experimental physics that was to earn him international renown. By 1950 he and his collaborators had observed the isotope effect that demonstrated the essential role of the electron–phonon interaction in superconductivity and thus provided the experimental foundation of the Fröhlich–Bardeen and ultimately the Bardeen–Cooper–Schreiffer theories, for which its authors were awarded the Nobel Prize in Physics. His subsequent work in superconductivity was equally incisive and valuable for theoretical developments. His work on magnetic properties, dilute alloys, magnetic and thermal properties of type-II superconductors and fluctuations made fundamental contributions at stages when the theoretical situation was still murky. He had many other interests, as illustrated by his work on rare-gas solids and transport properties of normal metals.

SERIN

Serin's experiments had, in concept as well as in manner of execution, an unusual directness, an essential simplicity that came from a deep understanding of the underlying processes and principles. He gave to his work the craftsman's attention to detail. His excellence was internationally recognized and he was the author of "Experimental Superconductivity" for the *Handbuch der Physik.*

The significance of Serin's research was a reflection and product of his grace and style as a person and as a physicist. His spirit and humanity were perhaps the most effective influences on the growth of the Rutgers physics department in all areas of research and teaching. His manner and judgement made him the most respected member of the department. When there were prob-

obituaries

lems, difficulties or crises, it was likely to be Serin who found a resolution. At meetings he rarely spoke first, but when he did his contribution was usually decisive.

His devotion to physics and people was nowhere more evident than in his relations with his students. He knew them well and took a personal interest in their lives as well as in their careers. He was always careful to build up their self-confidence, never rejecting an idea outright, but discussing it carefully, emphasizing the good parts. He worked side-by-side with his students in the laboratory, often far into the night. He taught a wide variety of graduate and undergraduate courses with characteristic thoroughness and dedication. During his last year at Rutgers he conceived and developed an entirely new elementary course for biology students.

Serin had a strong sense of social responsibility. At times of campus protest and unrest he was the center of efforts to remove inequities from the system and build a more responsive structure.

In moving to England Serin fulfilled a hope he had nurtured for many years. He and his wife were beginning to feel comfortable in their new surroundings. He was full of plans for new experiments and optimism for the future. We are grateful that he had the opportunity to start the new life he hoped for. We mourn in the knowledge that his life was cut off when he still had so much to give.

ELIHU ABRAHAMS
PETER LINDENFELD
Rutgers University
New Brunswick, New Jersey

Josef Maria Jauch

Josef M. Jauch died on 30 August in his native Switzerland, a few weeks before his sixtieth birthday.

After his diploma at the famous Eidgenossiche Technische Hochschule in Zürich under Pauli's direction, Jauch came to the US to work for his doctorate with E. L. Hill at the University of Minnesota. There he was the first to study dynamical symmetry groups in quantum mechanics, including SU_3, a subject matter which was fully appreciated only a quarter century later. He received his PhD in 1940 and returned to the ETH.

The following two years he was an assistant to Gregor Wentzel and worked on pair theory. In 1942 he returned to the US and remained for seventeen years, becoming a citizen in 1946. The first three of these years he spent as an assistant professor at Princeton Univer-